

# NASA News

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## Students Worldwide Anticipate Next Shuttle Mission

Students in schools worldwide from first grade to undergraduates are anticipating with excitement the next space shuttle mission, scheduled for launch Thursday, as their experiments venture into space.

The Space Shuttle Small Payloads Project (SSPP), based at the NASA Goddard Space Flight Center, Greenbelt, Md., and the Wallops Flight Facility, Wallops Island, Va., is providing flight opportunities for nearly 40 experiments designed to engage students in space and scientific exploration.

"Providing students the experience of being scientific investigators using the microgravity environment provided by the space shuttle reinforces their understanding of science, mathematics and technology," said Frank Owens, Director, Education Division, NASA Headquarters, Washington. "And it is this learning experience that can spark an interest and lead them toward a career in science or engineering."

"The Shuttle Small Payloads Project provides researchers a method for conducting science experiments in space at a low-cost. Experiments range from those with an educational emphasis to those conducted by world-class researchers focusing on space science, technology development, or microgravity studies," according to Gerry Daelemans, chief of the SSPP office at Goddard.

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The most noticeable of the educational experiments on STS-108 is the Student Tracked Atmospheric Research Satellite for Heuristic International Networking Experiment (STARSHINE-2). STARSHINE is an education program for students around the world to help construct a satellite and learn about satellite orbits and natural events that affect these orbits.

To be deployed after the Shuttle undocks from the International Space Station, the beach-ball size satellite is covered with nearly 900 aluminum mirrors that have been polished by almost 25,000 students around the world. The satellite should be visible on Earth with the naked eye.

Through the six-month lifetime of the satellite, students will be able to track its position, visually observe it at twilight hours, calculate orbits, measure changes in the orbit and observe the effect of solar activity on the orbit.

The Rocky Mountain NASA Space Grant Consortium, Salt Lake City, is sponsoring the project, the third in the STARSHINE series. The first was deployed during a 1999 shuttle mission and the second was launched from Alaska in September 2001.

Three organizations – Utah State University, Logan; Penn State University; State College; and the Argentine Association of Space Technology, Argentina – are flying Get-Away-Special canisters that include experiments that engage area students in space research. These experiments include the development of a low-cost and reusable plant growth chamber; examining the effects of the space environment on crystal growth, popcorn and seeds; and a water purification process.

NASA will fly three Space Experiment Module (SEM) payloads carrying 30 experiments designed by students from throughout the United States, Argentina, Morocco, Portugal, and Australia. In addition, STS-108 will mark the fifth anniversary of the flight of the first SEM on STS-80 in November 1996.

Three of these experiments were developed by high school students in Maryland, Illinois and Washington and were selected for flight through the NASA Student Involvement Program. These experiments will study the affect of microgravity on brine shrimp and their use as a food source for fish during long duration space missions; examine three dimensional resonance modes in microgravity and the relationship to structures made for the microgravity environment; and research how electrical currents flow in the space environment.

Another experiment will bridge generations as students from New Oxford Elementary School have teamed with residents at the Brethren Home Retirement Community, both in Hanover, Pa. The groups will examine how the space environment affects the growth of soy seeds.

In addition to the educational experiments, a number of other experiments will be flown that include examining smoldering combustion in microgravity, testing prototype instrument coolers for space flight, and investigating planetary dust rings.

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A complete list and descriptions of SSPP experiments on STS-108 can be found at

<http://www.wff.nasa.gov>

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